

An aerial photograph of a rural landscape during the war. The foreground shows a cluster of farm buildings with dark, gabled roofs. Beyond the buildings, the land is divided into numerous long, narrow, parallel strips of land, likely used for growing crops like potatoes. The overall color palette is a monochromatic yellowish-brown, suggesting a historical or archival photograph.

# LAND AT WAR

*The official story of British farming 1939-1944*

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# 1

## *War comes to the land*



NO WEAPON ever invented is more deadly than hunger; it can spike guns, destroy courage, and break the will of the most resolute peoples. The finest armies in the world, courageous enough in the face of bombs or bullets, can be reduced by it to helplessness and surrender.

This is the story of Britain's battlefield—the land; and of how 300,000 farms, strong-points in the battle against hunger, were armed, equipped and manned, so that the rich though neglected soil of these islands could be won back to fertility and help to feed and sustain a nation at war.

When, in 1939, we turned again to the land, we found it no more prepared for war than we were ourselves. It is true we had done very little to keep it trimmed for such an emergency. The Government had passed a number of measures to help the farmer, and the Agricultural Departments had worked hard to keep him on his feet, but 20 years of easy-going peace made that task extremely difficult, and the state of the world in general had, in fact, done British agriculture little good at all. The hungry lessons of the last Great War were too soon forgotten; we made promises to the farmer, but few survived for more than a couple of years. A large number of farms which in 1917 had only just saved us from starvation were allowed to slip back from cultivation to

ranching, a process of neglect and deterioration began, and it was not a happy story.

There are few farmlands in the world more lush, more responsive, or able to bear a greater variety of crops than those in these islands; there are few men with a better natural feeling for the land than that which our farmers and farm workers possess. They are the sons of Britain's oldest industry, the inheritors of a complex and highly developed craft. With their eye for animals, their love of the soil, their capacity for hard work and endless experimentation, their genius for cattle-breeding, and their prophetic sense of the weather, they are the product of centuries of natural wisdom.

Little of this can be learnt from a book; it can only mature slowly in the brains of a long succession of land-workers who have proved by their experience the reality of what may seem to us mere guess-work or superstition, but is in fact scientific truth. Because of their long centuries of achievement British farmers had a name in the world; they had bred such excellent strains of cattle, wheat and grasses, that many younger agricultural industries abroad were founded almost completely upon them. Agriculture, with seafaring, has always been one of the natural callings supremely important to an island people. We were never foolish enough to lose our mastery of the sea;



it seems all the more incredible that we should have forgotten our need for the land and allowed so much of it to deteriorate between the wars.

There were still, of course, many farmers in this country who were both modern and progressive, and were running their farms in the best possible traditions. In spite of the hard times, these farms endured by the merits of the men who ran them, and were to form a valuable advance guard, when war came, in leading the whole industry forward into war production. There were times, however, when they appeared rather as islands of good fortune in the general apathy from which the countryside was suffering.

Before the war, of the 48 million people packed into these islands, only about one million families were engaged directly in the production of food. Of the remainder most were concentrated in the cities. It is obvious that, with such a vast urban population to feed, Britain could never be wholly self-supporting, and the existence of those dependent urban millions constituted one of our gravest national problems. Influenced by the readiness of foreign countries to provide us with cheap food, we allowed our home production to fall far below the margin of safety. Prices dropped, and many a farmer, with little encouragement to grow crops except on the best land, concerned himself chiefly with cutting down expenses by turning to livestock farming on the ranching system. In the worst instances the fields became little more than exercising yards for this stock. Fed almost wholly upon imported food and owing little to the land they walked on, cattle were merely incidental to a process which turned the raw material from abroad into milk and meat. Many farmers were forgetting the use of the plough altogether; they were becoming no longer cultivators of land, but cattle-ranchers.

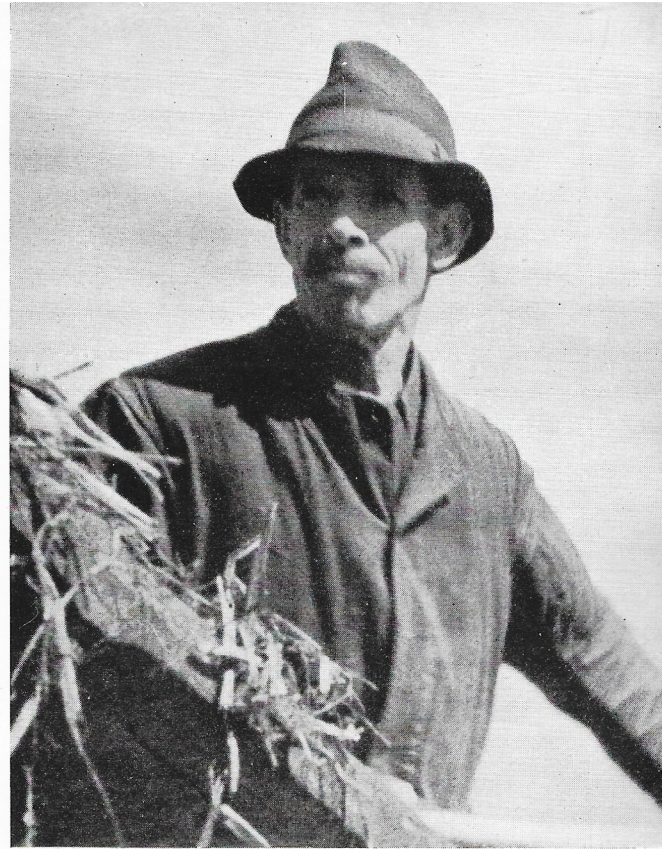
Black as this picture is, it does not, of course, relate to the whole of British agriculture; but it does express something of a

disease which was world-wide and had begun to strike seriously at the weakest links of our home industry. It was a problem with which the Agricultural Departments had been wrestling for some years. Much had been done to alleviate it. Subsidies and import quotas, and the vast marketing machinery built up from 1930 onwards, were by no means a wasted effort. During the decade which preceded the outbreak of war, these measures evolved and became the basis for a well-organised system of marketing and distribution of some of our agricultural products—a system which was more or less ready by the time war broke out. Efforts had been made, too, to build up fertility, and to accumulate a reserve of machinery for a time which some felt was bound to come. But because of the general apathy on the part of the layman these efforts, valuable as they were, had not achieved that degree of readiness which agriculturists would have liked, and when war did come, the Agricultural Departments were still faced with many serious problems.

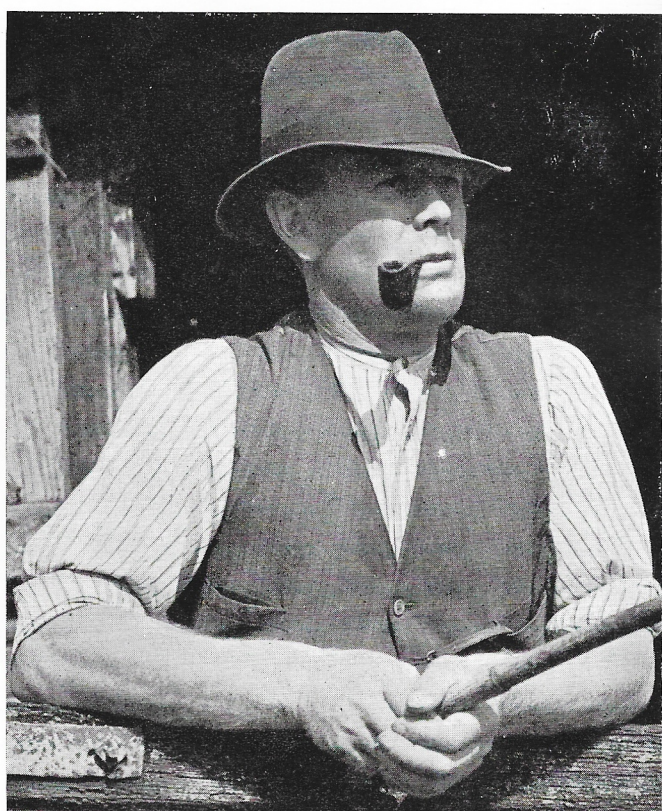
This, then, was the situation—Britain depending for over 60 per cent. of her food-stuffs from overseas sources, and her supply lines in danger of being cut at any moment; a vast population of soldiers and factory-workers to be fed; and much of the land out of heart and in a worse condition than it had been for many years. How, then, to avoid starvation? How, with too few tools, and with labour short, to plough the land, feed it, and cajole it back into good humour so that once again it might bear us ample crops? That was the problem.

It will be difficult to forget the strangeness of that first September: the breathless days of Indian Summer pregnant with news of war, the heat haze over the yellow fields, and the silence of earth and sky. The countryside was not to know that silence again for some years: gradually those skies began to shake with our heavy bombers, huge tanks would squeal through the narrow

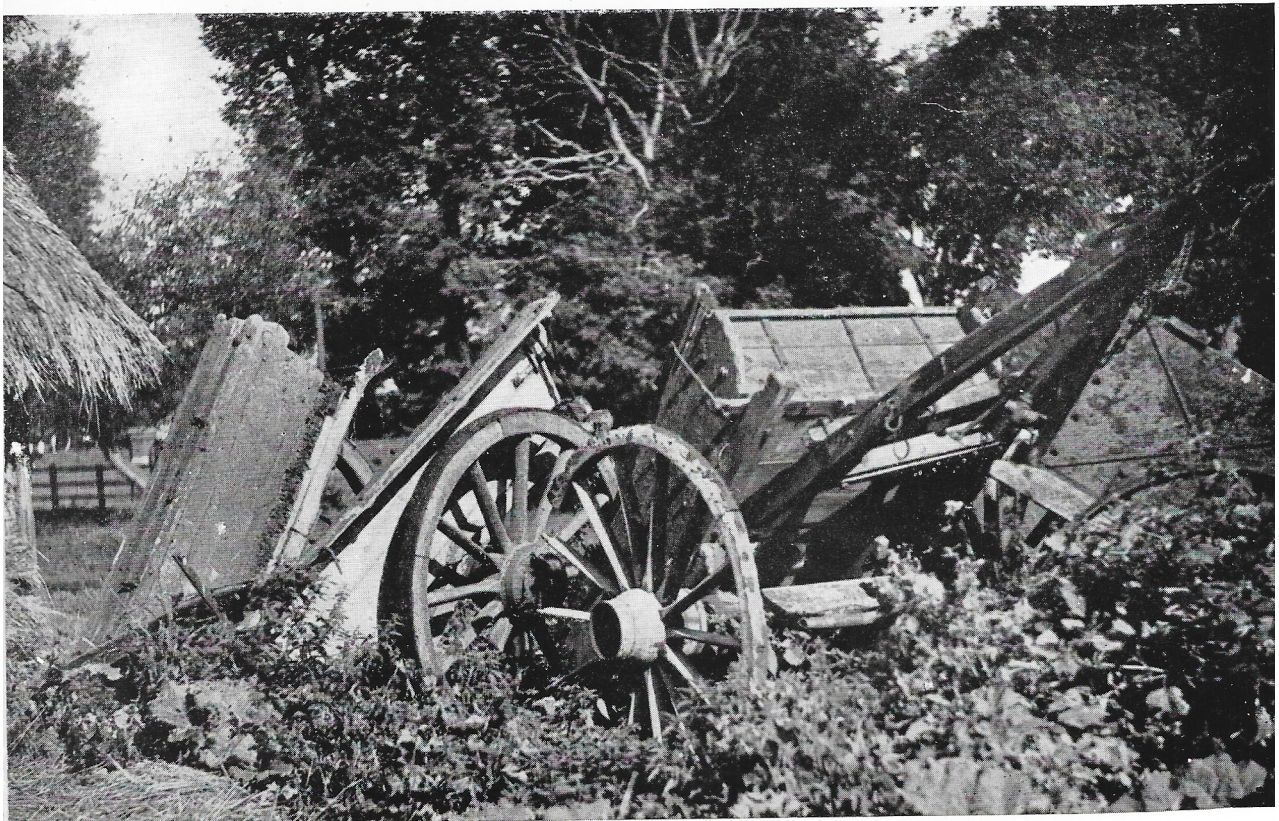




*“ . . . with their love of the soil, their eye for animals, their capacity for hard work . . . ”*







*BAD TIMES.* Twenty years of peace were not kind to every farmer. Tumbledown buildings, idle tools, fields strangled by weed and flood—these were legacies of ill luck, bad markets, slump. This had to be made good.



dusty lanes, and the fields themselves become a day-long clatter of drill and tractor, the tools of the land's offensive.

But in those early days there was none of that; the land lay listening, waiting for something to happen. It did not wait long. Already German submarines were out in the Atlantic, nosing across our sea-routes; and the explosions which shattered the hull of the *Athenia* came reverberating through the summer air, over the fields, up and down the quiet valleys like a note of warning. The blockade had begun.

Once more, then, Britain was alone, an island in the North Atlantic, packed with millions of people subject to the peril of starvation. No one knew just how real that peril might be. Suddenly all the overseas foodstuffs on which we relied became uncertain. We no longer knew whether we should get any at all. And once again we turned to the farmer for salvation.

The immediate job was to get as much land as possible ploughed up and planted by the following spring. The national larder was threatened, and thousands of tons of corn, potatoes and cattle fodder had to be found to fill it. There was not a moment to lose, for the need was urgent, the year was growing old, the land had to be ploughed and winter corn to be sown before it was too late. Every farmer was waiting to enter the battle, to be told his station, and put to the test. Not a moment was lost, for the Agricultural Departments had their war plans ready and brought them into action right away.

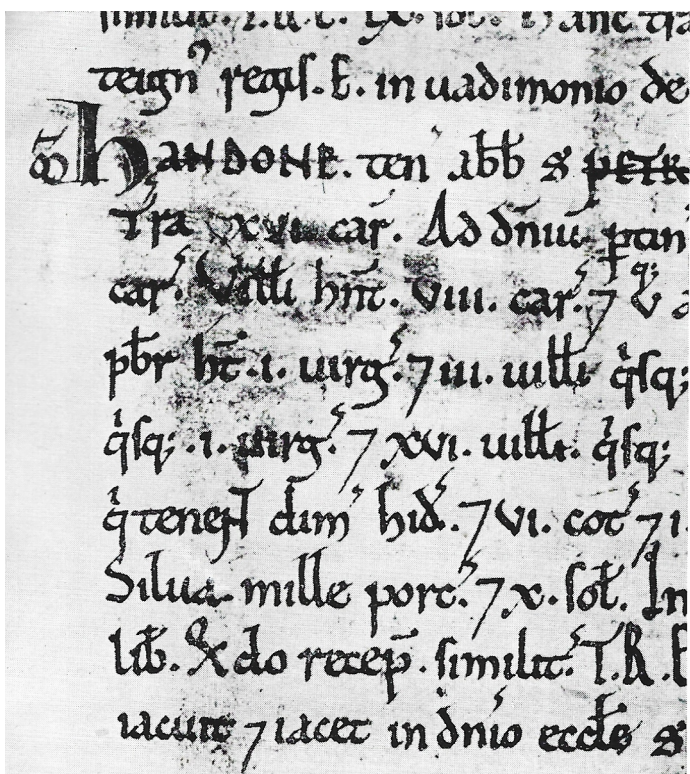
To start with, the Government needed leaders, men of example and imagination, men who had dirt on their boots, who knew the land; men, moreover, who spoke the tongue of the farmer, who knew his life and problems, and in just what way to ask for the impossible thing. For much that was formerly impossible had now to be done. Fortunately such men were not hard to find, and all over the British Isles the toughest

and most practical farm men in every county had already been chosen and formed into Committees to organise and inspire the work of their particular area. At the same time a Women's Land Army Committee was appointed for each county and empowered to find local representatives, whose job it would be to watch over the welfare of the land girls coming into their district.

On Sunday, September 3rd, these War Committees were called by telegram to immediate action, up and down the country. They were empowered by the Minister of Agriculture to enforce his special wartime measures. Yet theirs was a form of self-government, and their brother farmers, knowing that these powers would be exercised not by some band of remote officials but with the sympathy and understanding of their own kind, were the more content and the more willingly co-operative. Farm workers' representatives, who also sat on these Committees, gave helpful advice on labour matters and encouraged the workers in their efforts.

The Committees set to work without delay. They met in village inns, barns, town halls and farmhouse kitchens. They kept their talk short, for the time was short, and they had to get back to their fields. But each knew he was in the battle at last, and when he returned to his farm that night he had all the responsibility of his district upon him, and a list in his hand which said: "10,000 acres wheat, 6,000 acres potatoes, 1,000 acres sugar-beet, etc.", or more, or less, according to the size of his district. This was his immediate objective, and as he looked round the local landscape of unploughed grass, he may well have wondered if next spring would really see so many things growing, for no other spring had done so in 20 years. But that night or the following day he went round among his neighbours and showed them the list, and when they had all finished laughing, one or the other would say: "Of course it *might* be done, but I'm hanged if I can see how".





*DOMESDAY BOOK* 1066, in which William the Conqueror reviewed the wealth of his new conquest. Above are listed the ploughs, cattle, "hides" of land, which he found at Hendon.

Later, District Committees were formed with, if possible, a representative from every parish, and they put their heads together and in the end every local farm and field knew how best it could play its part.

That is how the somewhat prosaically termed County War Agricultural Executive Committees came into being. But do not let that word "Committee" mislead you. Here was no talk-shop, but a hard-bitten band of fighters who had a very real and critical battle on hand. Their first job was to bring in the straggling peacetime harvest as quickly as possible, to clear the tangled fields for action, and get two million extra acres of land ploughed up and under crops by the following year. This they achieved by what is perhaps the most successful example of decentralisation and the most democratic use of "control" this war has produced.

From Whitehall to every farm in the country the C.W.A.E.C.s formed a visible human chain, a chain which grew stronger with each year of war. Here, roughly, is the way it worked. The Government might say to the Minister of Agriculture: "We need so much home-grown food next year". The Minister assured himself that the labour, tractors, equipment, and so on, would be forthcoming, and said to the Chairman of a County Committee: "We've got to plough two million extra acres next year. The quota for your county is 40,000".

The Chairman said to his District Committee Chairman: "You've been scheduled for 5,000 acres".

The Committee-man said to his Parish Representative: "You've got to find 800 acres, then".

And the Parish Representative, who knew every yard of the valley, went to the farmer at the end of the lane.

"Bob," he said, "how about that 17-acre field—for wheat?"

And Farmer Bob said "Aye".

For the C.W.A.E.C.s, instead of issuing orders from the remote anonymity of a Whitehall desk, went out into the fields, into the barns and cowsheds, into the pubs and market-places, and talked, argued and pleaded with their fellow-farmers to produce what was needed. The result more than justified these methods of peaceful persuasion, and was a testimony to the public spirit and adaptability of the British farmer.

Thus the Agricultural Committees went to war, and with them a tough but independent army of farmers and workers, an army that had not only been through a bad time, but were then very short of the weapons for the difficult battles facing them. It was the task of the Committees to inspire that army, equip them, and show them what must be done. The old, independent peacetime methods of farming would not do any more. The job on hand demanded completely new



methods, modern methods, such as some farmers had not even heard of.

To help the Committees, the Government provided them with a staff of experts, under an Executive Officer, to spread these modern methods, to explain and popularise them. New personalities began to appear in the countryside; there were the Cultivations Officer, the Technical Officer, experts on silage, straw-pulping, ley-farming, farm-drainage, milk production, machinery, fertilisers, pests, and plant and animal diseases. Apart from the voluntary, unpaid Committeemen who were the prophets of the new farming, and who gave up all their spare time to the job, the Ministry of Agriculture roped in the best technical brains in the country: scientists, specialists, and young men whose studies of some particular branch of husbandry had taken them all over the world, to supplement its overworked nucleus of experts. It was the farmer's job to produce the goods, but he now had at his disposal the free advice and assistance of these experts on every conceivable problem.

With so much to be done, we had to have a full knowledge of our resources. Later on, a National Farm Survey was begun—a second Domesday Book—to record the state of every farm in the country. Nothing like this had been attempted since the eleventh century, when William the Conqueror set out to discover the wealth of his new conquest.

*“Then sent he his men all over England into each shire commissioning them to find out how many hundreds of hides were in the shire, what land the King himself had and what stock was upon the land, or what dues he ought to have by the year from the shire.”*

But the aim of this present survey was somewhat different. Agriculture at war had to know the exact strength of every fighting unit. Hundreds of field-workers, mostly volunteer Committee-men or retired farmers, began the gigantic task of surveying every holding with more than five acres of land. They covered every shire and parish; they

## B. CONDITIONS OF FARM.

| 1. Proportion (%) of area on which soil is       | Heavy      | Medium | Light | Peaty |
|--------------------------------------------------|------------|--------|-------|-------|
|                                                  |            |        | 45    | 25    |
| 2. Is farm conveniently laid out?                | Yes ...    | ...    |       | X     |
|                                                  | Moderately |        |       |       |
|                                                  | No ...     | ...    |       |       |
| 3. Proportion (%) of farm which is naturally ... | Good       | Fair   | Bad   |       |
| ...                                              | 65         | 35     |       |       |
| 4. Situation in regard to road                   | X          |        |       |       |
| 5. Situation in regard to railway                |            | X      |       |       |
| 6. Condition of farmhouse                        | X          |        |       |       |
| Condition of buildings                           | X          |        |       |       |
| 7. Condition of farm roads                       |            | X      |       |       |
| 8. Condition of fences                           |            | X      |       |       |
| 9. Condition of ditches                          | X          |        |       |       |
| 10. General condition of field drainage          |            | X      |       |       |
| 11. Condition of cottages                        |            | X      |       |       |
| 12. Number of cottages within farm area          | ...        | ...    | No.   |       |
|                                                  |            |        | 2     |       |
| Number of cottages elsewhere                     | ...        | ...    | 0     |       |
| 13. Number of cottages let on service tenancy    | ...        | ...    | 1     |       |

*FARM SURVEY 1940.* Nine hundred years later, as a new invasion threatened, Britain made a second survey. Every farm was noted, with the state of its buildings, roads, fences, and its soils.

worked with 6-in. scale ordnance maps, tact, circumspection, and plain physical stamina. For they not only had to assess the qualities of the land, they had to sum up the qualities of the farmer himself.

In the end, they had searched thousands of square miles of country, recording in detail the condition of each farm, the state of the land, the types of soil to be found there, the acreages of crops, acreages of grass, and the areas of dereliction. They had noted, too, the state of buildings, cottages, cart-roads, fences, ditches, drains, water and electricity supplies; the degree of infestation from rats, rabbits and other pests; and whether or not the farmer was a good one.

Britain is not so well known as we imagine it; main roads have worn a familiar track across particular stretches of country, but away from these you are often in lands and valleys unfrequented, and unchanged by the



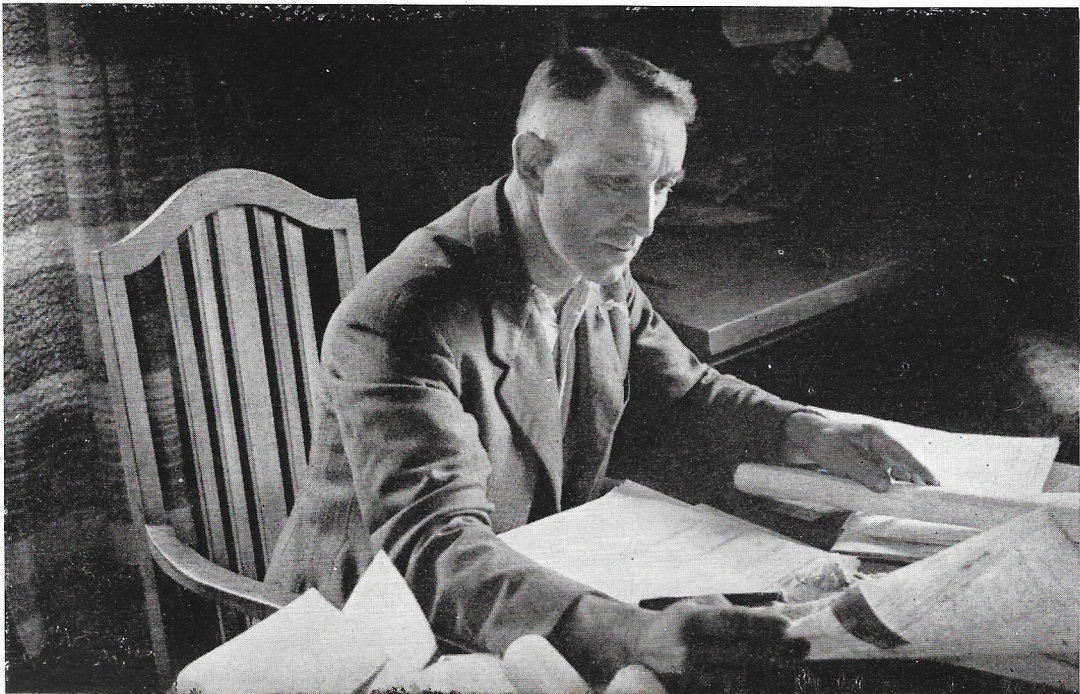
years. All these were explored at last, many strange facts discovered, and many old mysteries cleared up. Grazing lands, held in trust by villages, about which no documents existed nor any proof but the proof of tradition, were noted down for the first time in centuries.

But particularly the good farms and the bad farms were noted, and the reasons for the latter recorded—lack of adequate roads, lack of lime, etc.—so that steps might be taken to improve them. The job took a long time, but it was not attempted out of mere curiosity. There now exist detailed maps upon which, outlined in different colours, 300,000 farms are marked and known. This Farm Survey may well eclipse the Domesday Book not merely in comprehension but in historical importance: it not only provided invaluable data for the wartime

mobilisation of our resources, it has helped to establish a blue-print for post-war agricultural planning.

But long before this Survey started, the great ploughing-up offensive had begun. County Committees, having allotted targets to every farm, began to organise labour for those who needed it. And the farmers, clearing their peacetime harvests, or those without harvests at all, began to look to the approaching winter of 1939-40 as a time for unprecedented activity. Two million acres of old grassland had to be turned over in a few months, had to be turned face downwards so that frost could work upon the weeds and grubs, could break up the soil, clean and prepare it for the first wartime crops upon which so much depended. It was a bitter winter, harsh and uncompromising, but for the farmers of Britain it marked their first victory.

*PLAN OF OPERATIONS.* Farming is a battle against time and weather. Crops must be planned, labour and machines organised, seed sown at exactly the right moment. The land does not wait.





# 3

## *Factory on wheels*



THE WINTER CORN survived ; the spring wheat grew strong and lusty, spreading broad sheets of blue metallic leaf over the fresh ground. Here was a visible promise of the harvest to come, something real to justify the bitter months now past. But there was already more to be seen there than the mark of the plough. Other signs began to appear of even deeper significance—the sight of unfamiliar machines working the sprouting fields, cleaning, rolling and cultivating.

A hundred years ago power came into industry ; the railroad replaced the pack-horse, the steel foundry the blacksmith, mass-production the craft of the individual. Smoking cities spread out and dominated vast areas of country, drawing thousands of rural workers into the factories. Agriculture was left in a state of isolation by this upheaval, cut off from the industrial community by an ever-widening gulf of different traditions and experience. The application of power to the land was to bridge that gulf, was to compensate for the drift of men from the land, attract fresh blood to it ; was to increase both the scope and tempo of agriculture and bring it into line with other forms of human activity—particularly war.

This change had already begun to manifest itself ; war merely speeded up its development. The old inherited principles of good

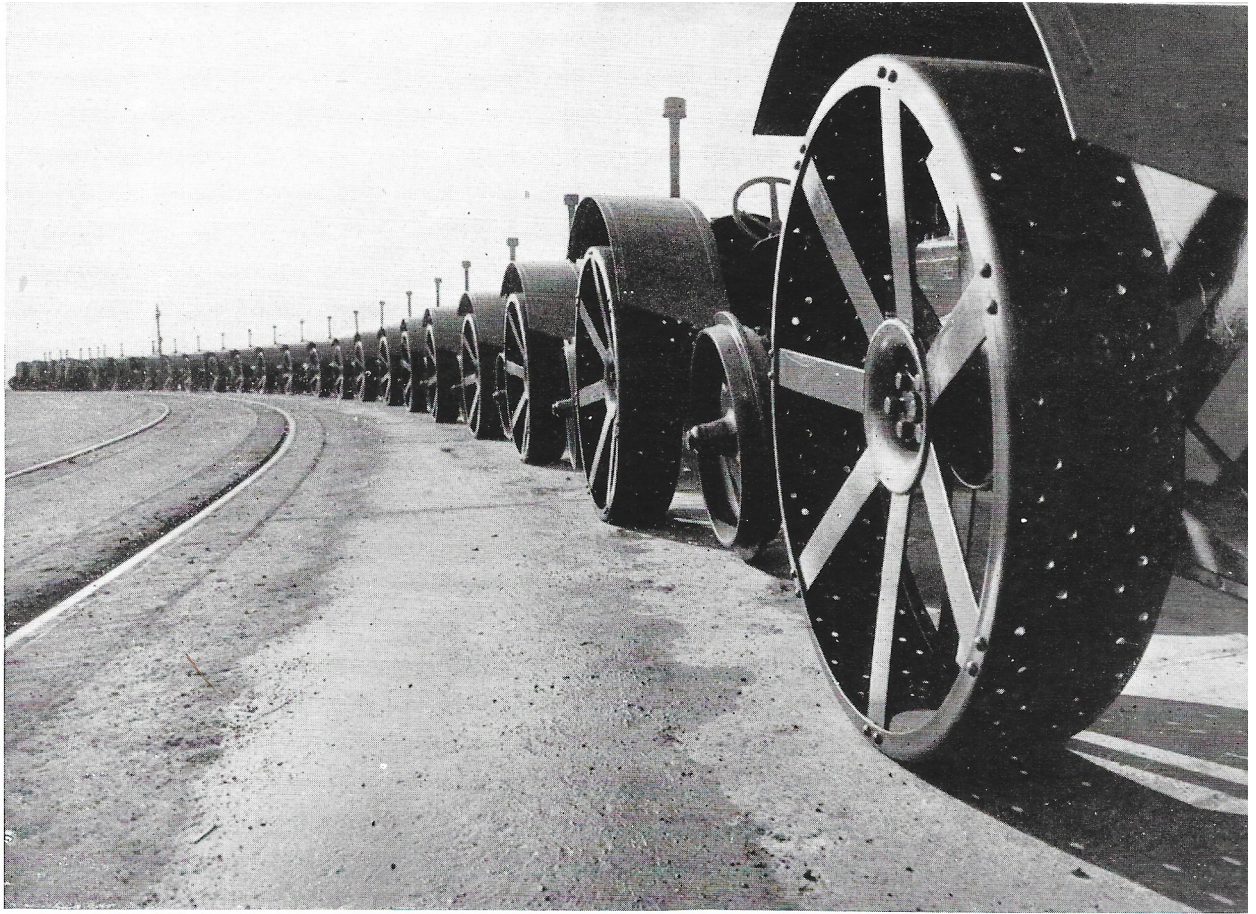
husbandry remained, but mechanisation was giving them a special twist. The whole direction of British farming was changing, not only in its capacity to work more land with less labour, but in the type of crops to be grown, the type of cattle to be raised, even in the methods of feeding them.

The problems of intensive cultivation have always been labour and time. Crops have to be planted at the right moment, or they may never flourish. And where the climate is as unpredictable as it is in Britain, the right moment has to be seized and exploited to the full, for it may not come again. Even if there is an abundance of physical labour, each man has only so much strength, and the day is only so long.

But the time had come to ignore such limitations. Complex and critical operations had to be carried out in a very short time, vast areas planted, worked and harvested. The farmer was faced with a severe test ; and it was the machine that helped to solve problems both of time and accomplishment by extending enormously man's power over land.

By 1939 the mechanisation of agriculture had already reached a high stage of development abroad. The enormous farmlands of America, Canada, Australia, and the Soviet Union, presented problems of space which could never have been solved without the





*TRACTORS ON PARADE.* New from a British factory, they will give the farmer power for ploughing, sowing, reaping and threshing. They lead the mechanised regiment of agriculture.

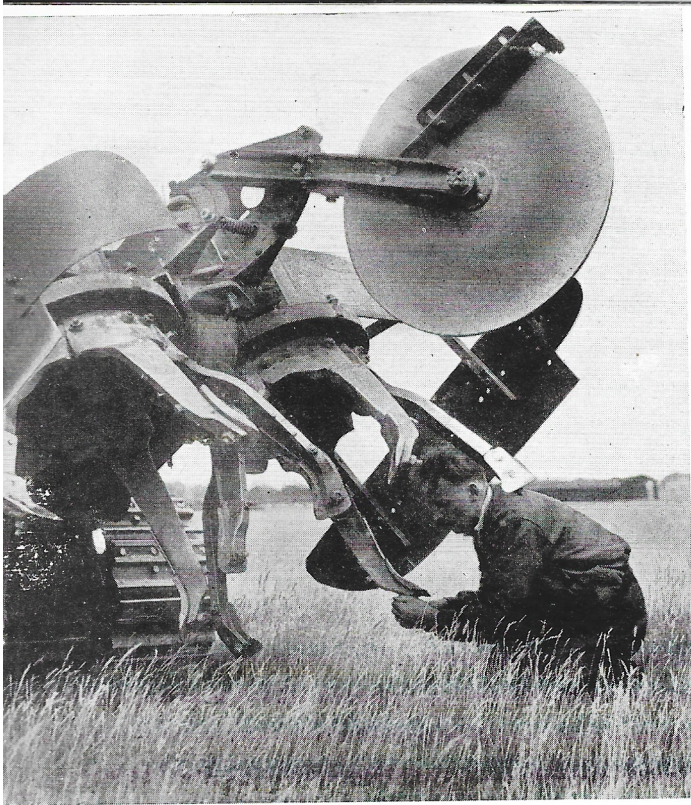
use of great technical skill and imagination. Powerful and ingenious machines had long been in use there, designed to cope with all the complicated processes of cultivation in fields often larger than an English parish. Millions of fertile acres in the Ukraine, the Canadian wheat-belt, the American Middle West, would never have been cultivated at all without their aid.

To Britain, on the other hand, mechanisation came comparatively late, though its principles were already well established by the time war broke out and big strides have been made since then. By 1944 this country had over 175,000 tractors, compared with 55,000 in 1939. After the first five years of war Britain possessed one of the most highly mechanised agricultures in the world.

This was due largely to two things—the efforts of our own home industries and the generosity of our friends and allies. Inspired by the country's need the numbers of British-made tractors and other farm implements increased by leaps and bounds. Raw materials were scarce and the programme of war gave priority to the production of tanks, guns and other munitions. Labour was short, and skilled engineers practically unobtainable. Struggling continually to get the right materials and to maintain their labour force, the factories did a good job—far better than could ever have been expected in the circumstances.

The material help given by America and the Dominions was tremendous. Throughout the U-boat campaigns of 1941, and later,



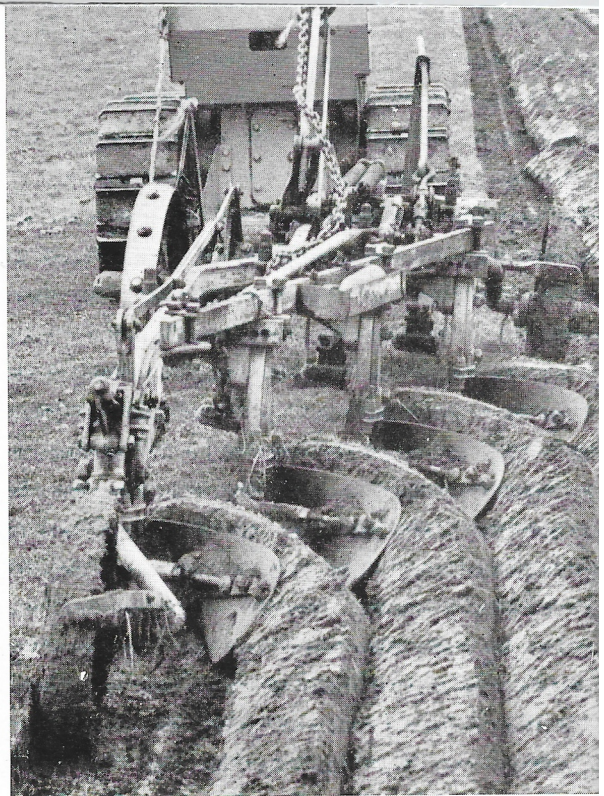


*TEETH OF THE GYROTILLER.*

cleaning field ditches ; it can replace a whole gang of men, its jaw scooping out deep canals with speed and precision, and preparing the way for the work of other ingenious drainage tools such as the mechanical trencher and the mole plough.

This mole drainer is a subterranean tool. It is fitted with a heavy blade and a torpedo-shaped piece of steel—the “mole”—which is used to force a series of channels beneath the ground, linking the field with the piped mains which in turn carry the water into the ditches. The operation of mole-draining calls for enormous pulling power, which only the heavy crawler tractor can exert. Drainage work is some of the toughest farm work there is, and though some girls can tackle it, it is still largely a job for men.

Among the other heavy machines standing about the yard is the bulldozer, a battering ram with astonishing tenacity and strength. Mounted on caterpillar tracks, it thrusts

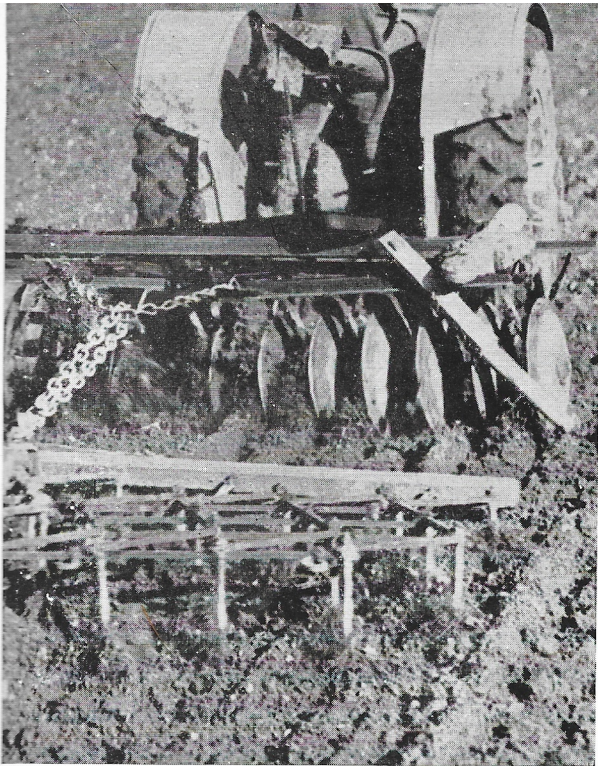


*CUT OF THE PLOUGH.*

everything before it, slicing through hillocks, clearing the most unmanageable debris, pushing over trees. Another is the gyrotiller, huge, lumbering and slow, almost without equal in taming wild land. It combs the ground with thick steel prongs and stirs it up with a set of wicked-looking blades that revolve like an egg-whisk. This formidable combination can root out the toughest bushes and tear through the most obstinate tangle of roots and stones. This particular one has been working on the clearing of an old forest, its stubborn juggernaut progress combing out tree roots and matted briars at the rate of an acre a day.

The morning is still early and hardly light ; the weak spring sun shines dimly in the yellow puddles, but the depot is swiftly emptying. Farmers, farm workers, Committee drivers, land girls, all wrapped in mud-caked mackintoshes, make a loud noise compounded of argument, advice and warning, as they

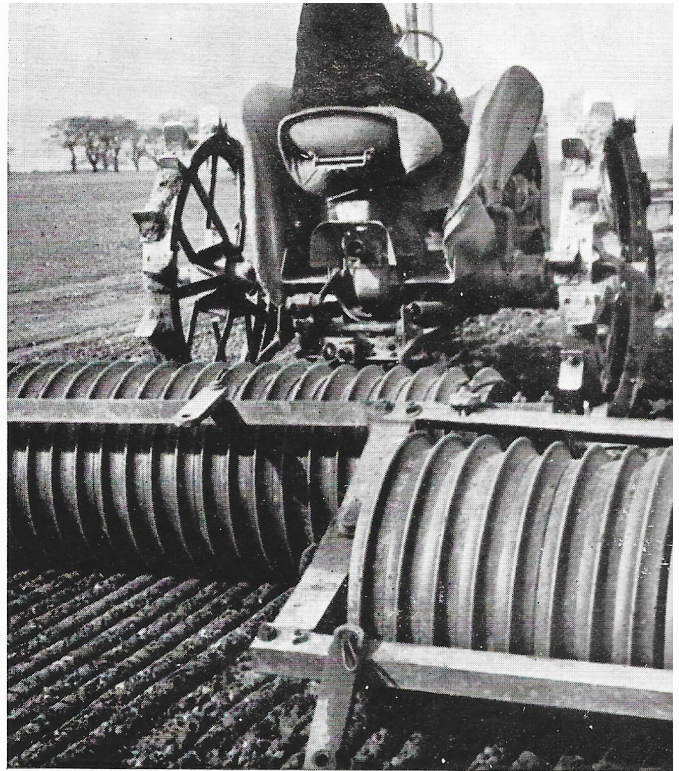




*RAKE OF THE HARROW.*

collect their tools and drive them away down the chill echoing streets. As the year advances, this busy traffic of workers will continue, but the type of tool they ask for will change. Spring—like autumn—is a time for preparation, tillage and sowing, and the tools being taken out now are mostly ploughs and cultivators, disc harrows to slice up the furrow, combined seed-drills which sow seed and fertiliser together, rollers to cover and consolidate the seed bed, and the labour-saving potato-planter which is tuned to drop seed at given intervals.

The next demand will be for potato-ridgers, and machines with curious spasmodic movements designed for weeding, hoeing, or the transplanting of seedlings. Then the tools for harvesting: mowers, balers, rakes, elevators, for cutting, turning and stacking grass; potato-lifters with revolving forks that throw up the tubers for the pickers to gather. Then the sturdy reapers and binders,



*PRESS OF THE ROLLER.*

veterans of long service but still capable of good work. And finally those giants of the fields, the combine harvesters—complex machines which, manned by one or two men, concentrate all the many processes of grain harvesting—reaping, threshing, drying and bagging—into one swift, continuous movement.

On big fields, where the grain is in good condition, these machines can clear as much as 20 acres a day. They are invaluable in bad weather; by their speed they have saved thousands of tons of threatened wheat from otherwise certain ruin. One Cambridgeshire farmer, racing a storm, brought four of them to his fields as a last hope to save the ripened grain. He drove them through the wheat together in echelon, clearing 36 feet in a single sweep—compared with the five-foot cut of the old horse-drawn binder. When the storm broke, the grain was safe in the barn instead of soaking in the fields.



their new equipment. Their talent for improvisation and invention has always been highly developed ; it had to be, for farming has a habit of throwing up problems which must be solved on the instant by intelligence and intuition. But in this war the land-workers not only improved and adapted by their own experience many machines coming into their hands : during the early shortage of tools, they often rigged up the most remarkable substitutes on their own.

So power came to the land, such power as it had never seen before—power to move mountains, drain marshes, to turn bogs into cornfields and cover hills with potatoes ; power to fight weather, disease, thorns, rocks, wilderness ; power to sow crops without hands and to harvest without loss ; power to

win food from the most difficult soils, to spread grass over bracken, to feed beasts where no beast could live before ; power which could often be operated by girls and could do the work of armies.

Through it, agriculture found its feet again, stretched out, and tested its new strength. It will never again be just a country cousin ; its life is ahead of it, equal to anything the modern world can bring. And, unlike those other symbols of power seen on the battlefield—contraptions bred only for war and death—the farm machine is designed for the living. It can be part of an expanding and highly developed industry, whose work in peace will be as vital to the hungry world as anything it did to help us win the war.

